

What is claimed is:

1. A bonding method in which an electronic component is connected via bumps to a substrate and the electronic component is then packaged on the substrate, comprising the
5 steps of:

performing plasma processing on a surface of the substrate that packages the electronic component, a surface of the electronic component that is connected to the substrate, and a surface of the bumps;

heating the bumps to a temperature lower than a melting point of the bumps; and
10 compression bonding the substrate and the electronic component via the bumps.

2. A bonding method according to claim 1, wherein ultrasonic waves are directed on the bumps when the substrate and the electronic component are being compression
bonded via the bumps.

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3. A bonding stage that packages an electronic component on a substrate, comprising a placement member, the placement member having a plasma generating electrode and an electrostatic adhesion electrode, and the placement member having a placement surface on which is placed the substrate or the electronic component.

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4. A bonding stage according to claim 3, wherein the placement member is provided with a heater electrode.

5. A bonding stage according to claim 3, further comprising a cylindrical supporting
25 member that supports the placement member, wherein one aperture portion of the

supporting member is joined in an airtight seal to the placement member, and a ceramic thermal insulation material is provided inside the supporting member.

6. A bonding stage according to claim 5, wherein the ceramic thermal insulation
5 material is an $\text{Al}_2\text{O}_3 - \text{SiO}_2 - \text{CaO} - \text{Li}_2\text{O}$ based ceramic thermal insulation material.

7. A bonding stage according to claim 5, wherein the supporting member is formed from stainless steel or an Fe-Ni-Co based alloy.

10 8. A bonding stage according to claim 5, wherein the placement member is joined to the supporting member via an O-ring or a metal gasket.

9. An electronic component packaging apparatus comprising:

the bonding stage according to claim 5;

15 a bonding tool positioned above the bonding stage; and

a chamber that houses the bonding stage and the bonding tool.

10. A electronic component packaging apparatus according to claim 9, wherein the bonding tool is provided with an electrostatic adhesion mechanism that electrostatically
20 holds the substrate or the electronic component.

11. A electronic component packaging apparatus according to claim 9, wherein the bonding tool is provided with at least one of a plasma generating electrode and a heater electrode.

12. A electronic component packaging apparatus according to claim 9, further comprising a pressure application mechanism that applies pressure to the bonding tool.
13. An electronic component packaging apparatus according to claim 9, wherein the
5 bonding tool is provided with an ultrasonic device that emits ultrasonic waves.